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H5H HMB
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(56) Documents cited

EP 0451530 A
US 4970358 A

EP 0317203 A
US 4916279 A

EP 0312333 A
US 4780587 A

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Online databases: CLAIMS, WPI

(54) Food package with overlapping microwave susceptor layers

(57) Packaging for foodstuff to be cooked in a microwave oven has receptor material which heats up due to microwave interaction and can therefore conduct heat to the foodstuff for example to brown or crisp same, which cannot be achieved by microwave action alone. The packaging is constructed so that in one area thereof, there are two overlapping but discrete layers 14, 20 of the receptor material so that such area heat up more intensely than other areas of the packaging to apply more intense local heat to a part of the foodstuff requiring such heat.

Susceptor material may be printed onto a cardboard blank or applied as a metallised film and the blank overlapped, or the second susceptor layer may be carried on an insert.

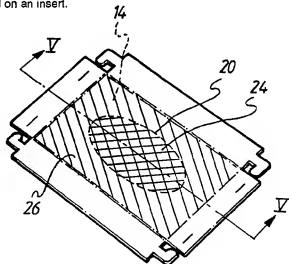


FIG. 3

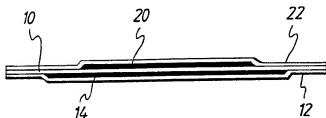
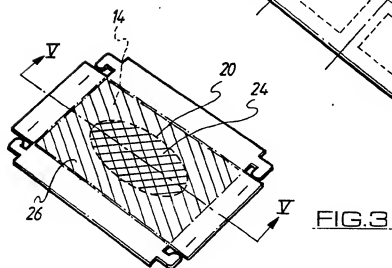
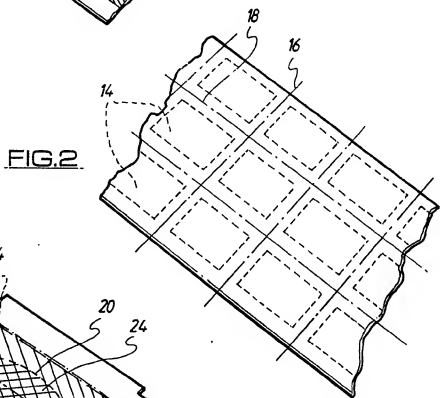
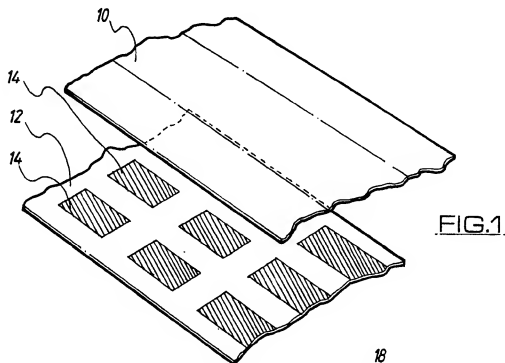


FIG. 5



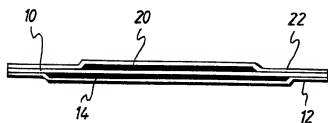


FIG. 5

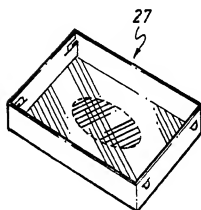


FIG. 4

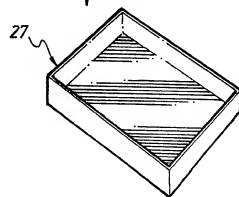
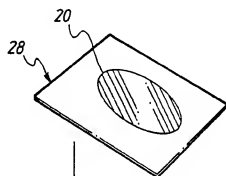
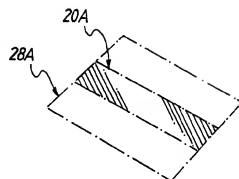


FIG. 6

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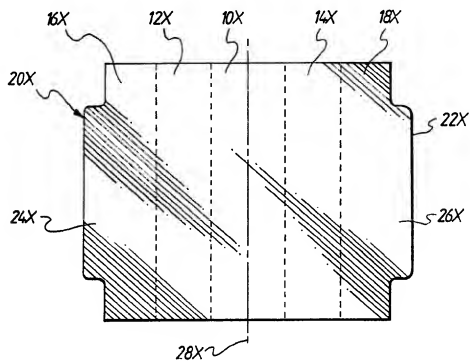


FIG. 7

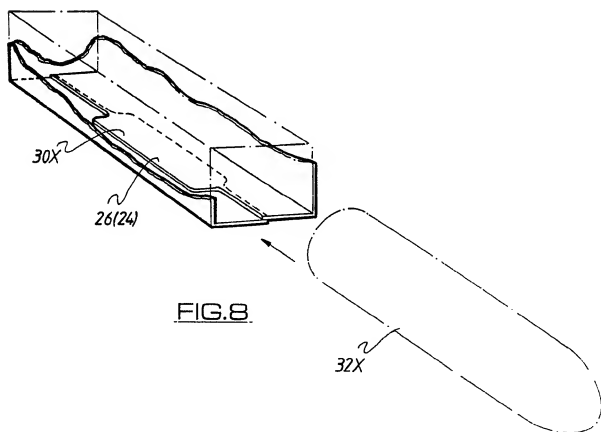


FIG. 8

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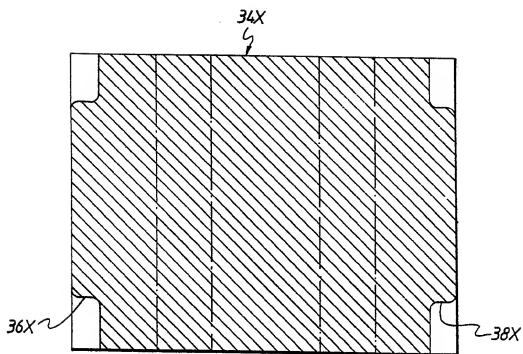


FIG. 9

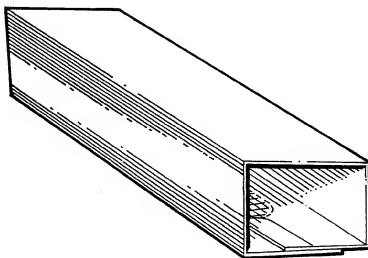
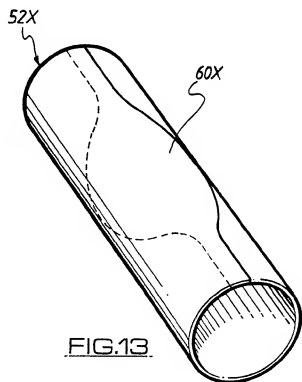
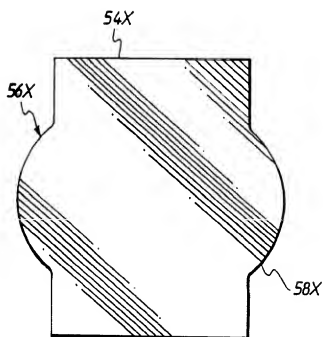
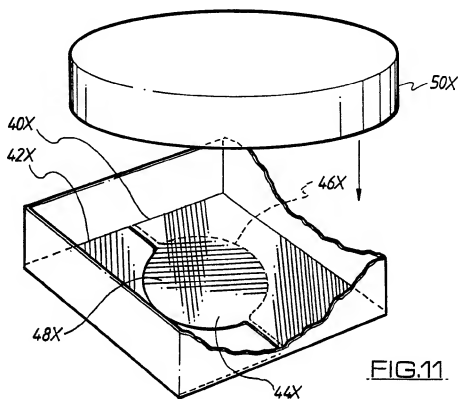


FIG. 10

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Improvements Relating to Packaging Containers

This invention relates to packaging containers which are for foodstuffs to be heated in a microwave oven.

The containers can be used for other products, but as by far they will be used mostly for foodstuff, reference will be made hereinafter only to foodstuff.

When microwave heating certain foodstuff, it is often a requirement that the surface of the foodstuff should be browned or crisped in order to give the foodstuff the appearance of having been cooked by more conventional forms of cooking such as roasting or frying, and to achieve this receptor materials have been developed. A receptor material is a material which heats up rapidly under the influence of microwave energy, and if the foodstuff is located in contact therewith or adjacent thereto, it receives heat by conduction to its surface which gives rise to a browning or crisping effect, whilst the remainder of the foodstuff is being heated throughout by conventional microwave effect.

Receptor materials typically comprise layers of conductor particles, usually metal, and there is some criticality in the thickness of the metallic layer and its composition.

An indication of receptor layer theory and application is given in British Patent No. 2,046,060, but it is not possible to put strict limits on receptor layer thickness.

Conventional practise furthermore has suggested that the receptor material particles should be vacuum deposited on a plastics material film, and the film laminated to a substrate such as a sheet of paper or carton board with the metallic layer between the plastics film and the substrate, so that it

will in fact be isolated from the foodstuff, assuming the foodstuff to be for positioning in contact with or adjacent to the plastic material film.

It is to be mentioned that receptor layers need not be formed and produced by vacuum deposition. They may for example be applied by printing techniques as disclosed in European Patent Application No. 0,276,654, and as mentioned above the conductive particles need not be metallic. They could be for example graphite particles or a mixture of particle types.

As stated herein, the receptor layers are embodied in containers for foodstuff such as sleeves, trays, boxes, wrappings and the like, and it is known to embody the receptor material in the container in the form of a flat insert and to take steps to ensure that heat is applied from the receptor layer to the foodstuff only in required locations on the foodstuff, for example on the base in the case of a pizza.

However, even the selective heating of regions of the foodstuff has not provided the complete answer, and it has been recognised that within an area of the receptor heating material, there is still a need and desire to provide a certain amount of differential heating. That is to say for example if the base region of a pizza is to be heated by receptor material to crisp and brown same, there may still be a requirement to have a central region of greater heating than the periphery, and receptor materials have to be organised to provide this effect.

Various attempts have been made to provide these so-called differential heaters, and one method is disclosed in our European Patent Application No. 0327243, wherein the receptor

material is treated by mechanical embossing so as to reduce the heating effect where embossing has been applied, and to leave an unembossed region which will heat up to a greater extent than the remainder of the receptor layer under the influence of microwaves.

Another method of providing a differential heating arrangement is to apply extra layers of receptor material in a selective region or selected regions of previously applied layers, as described in European Patent Application No. 0276654.

The present invention is concerned with the provision of the increased heating effect and provides a general and several specific concepts for achieving same in an improved manner.

According to the invention there is provided packaging for foodstuff for the cooking of same by microwave heating, wherein the packaging has receptor material which heats up upon being subjected to microwave, and wherein there is an area defined in the packaging by two discrete overlapped layers of said receptor material so that said area will heat up to a greater extent than another area or other areas of the packaging provided with said receptor material for the application of more heat to a preselected area of the foodstuff, and wherein the said overlapped areas comprise receptor material placed upon opposite sides of a substrate forming part of the packaging.

Preferably, the receptor material is over all of one side of the substrate, and only over the area required to be heated to a greater extent on the other side of the substrate.

Preferably, the receptor material on said one side of the substrate comprises a vacuum metallised film.

The receptor material on the other side may comprise a vacuum metallised film patch but alternatively may comprise a layer applied as a liquid composition as set forth in said European Patent Application 0,276,654 by printing or the like.

Preferably also, the substrate may comprise a packaging tray or container in which the package contents are held, the receptor material being on the base.

In a preferred case, the substrate is a cut and creased blank which can be erected into the tray or container, said blank having a vacuum metallised film over the entire surface of one side and the receptor applied only selectively to the other side, preferably on a portion which forms the base of the resulting container, said vacuum metallised film having been applied to the substrate before it is cut and creased.

The invention also extends to providing one side of a substrate sheet with overall receptor on one side thereof, followed by cutting the sheet into cut and creased blanks, receptor being selectively applied to the other side of the substrate, either before or after cutting same into blanks.

After the application of the receptor to selected areas of the other side of the substrate, said receptor especially if applied by printing or the like, preferably is covered for protection by means of a protective paper, film or the like.

According to the invention there is also provided packaging for foodstuff for the cooking of same by microwave heating, wherein the packaging has receptor material which heats up upon being subjected to microwave, and wherein there is an area defined in the packaging by two discrete overlapped layers of said receptor material so that said area will heat

up to a greater extent than another area or other areas of the packaging provided with said receptor material for the application of more heat to a preselected area of the foodstuff, and wherein the said overlapped areas comprises overlapped panel portion of a packaging container each of which is covered with receptor, and of which panel portions edge regions only overlap to define the area which heats up to said greater extent, and the remainders of said panel portions define said other area.

Preferably, the edges of said panel portions where they overlap are profiled so that the said one area is jointly defined by the profiling of the respective edges.

Preferably, the packaging container comprises a sleeve of which the respective edges overlap longitudinally of the sleeve and said edges are each profiled to define a central projecting lobe, said sleeve being covered overall with said receptor material.

In a specific form the present invention seeks to provide a further arrangement wherein packaging comprising a container, or an insert for a container, embodies receptor material, in such fashion to provide pre-determined differential heating effects for the foodstuff to be heated in the container or a container with the said insert.

In accordance with this aspect of the invention, packaging comprising a container or an insert for a container, or sheet material formable into a container is produced by providing a base component comprising a substrate, a first receptor layer and a protective covering, the receptive layer being between the substrate and protective covering, and further providing a second receptor layer which in use will overlap said first receptive layer but not exactly so that where the first and

second layers overlap there is provided a region of high heat energy capacity, and where the first and second layers do not overlap is provided a region of lower heat energy generation capacity, the second receptor layer being provided in accordance with any one of the following arrangements:-

second layer applied to the base component to one side or the other;

where the base component is a tray or container, the second receptor layer provided as an insert; or

where the base component is a tray or container, second receptor layer provided in a complimentary tray or container which is to be used in conjunction with the base component in that the tray or container base component interfits with a tray or container of the complimentary component to cause the first and second receptor layers to be appropriately juxtaposed in the finished container.

Where the second receptor layer is applied to one or other side of the base component, this may be performed during the manufacture of a multiplicity of the base components i.e. in large sheets or webs, prior to the cutting of the sheets or webs into individual base components, which may be for example blanks which are cut and creased so as to be foldable into the container configuration. The base components may also be separate the rectangular blanks which are wrapable into sleeve configuration, or they be more elaborate blanks erectable into containers for holding foodstuff.

In one arrangement of the nature described above, a plastic carrier film for the receptor material is provided with a plurality of evenly distributed patches of receptor material, these having been applied by any convenient means such as

printing or overall application followed by selective removal, transfer application or the like, and such patches for example form the first receptor material layers. The film is laminated to a paper or board substrate trapping the receptor material between the substrate and the plastic film. To the other side of the substrate is applied a second film also provided with receptor material patches forming the second layer of receptor material, said second layer patches being in register with the first layer patches, but at the opposite side of the substrate. If the first layer patches are of rectangular configuration, the second layer patches may be round or elliptical and of smaller dimension than the first layer patches, but in central register therewith so that said second layer patches define the regions of high heat.

The resulting laminate may thereafter be cut and creased to define individual foldable trays of which the base is of the same fitting shape as the first receptor patches so that the entire base of each tray has receptor material therein, but the central region of the base only has the second receptor layer therein and only that region will be heated to a greater extent when the tray is eventually used with foodstuff therein, in microwave cooking.

Instead of forming the blanks into trays, they could be formed into sleeves or containers which completely enclose the foodstuff.

Alternatively, the laminated layers may be cut into plain rectangular blanks which can be used as wrappings for food.

In yet a further arrangement, the second plastic film and its second receptor patches are applied to a second substrate, and that substrate is cut into complimentary components, the

first substrate having been cut into base components, and the base components and complimentary components, after erection if appropriate, are adapted to be fitted together so as to result in the same disposition of the first and second receptor patches as described above and for the same purposes. For example, if the base components are erectable into trays as described above, the complimentary components may be simply rectangular inserts, each with a second receptor material patch in the centre thereof, and the insert being adapted to be positioned in the tray to cover the base thereof.

The base and complimentary component could be a pair of sleeves which interfit, a container and a tray therefor, two interfitting trays, and so on.

The receptor material layers can be laid down in any convenient fashion, although vacuum deposition of plastics material films and the printing or coating described herein are likely to be used most widely.

The present invention in another embodiment seeks to provide a packaging which can provide that the receptor material is located so as to give a concentrated heating effect in a particular area, for example in the base of a pizza in the central region thereof, it having been noted in using conventional containers for heating pizzas, French bread and the like, that at the conclusion of heating, the central base region of the foodstuff remains soft and soggy.

The present invention in said other embodiment aims to provide packaging which is simple and easy to produce and embodies receptor material in a fashion providing for the avoidance of the above mentioned disadvantage or the reduction of same.

In accordance with the present invention in a further aspect thereof, packaging for holding foodstuff to be heated by microwave heating comprises sheet material provided with receptor material, portions of said container having said receptor material overlapping in a region where increased heat is to be applied to the foodstuff, and the receptor material in said overlapping region having an edge which is contoured so that the overlapped sections of receptor material define a contoured shape in a region which will coincide with a region of the foodstuff to receive increased heating which results by virtue of the overlapping of the receptor material.

Preferably, the container comprises a blank of sheet material having free edges which overlap to provide said overlapping portions, at least one of said edges being contoured, and the said edges having receptor material thereon.

Preferably, both of said edges are contoured.

The said contouring may comprise a bulbous convex portion on each edge, so that when the edges overlap, the overlapped region comprises an oval, or circular or the like region where double thickness receptor material exists.

In one example, the container is in the form of a sleeve made from a blank of cut and creased material, which is overall provided with the receptor material, the edges of the blank which overlap to form the sleeve being contoured to provide the contouring of the receptor material.

The overlapping edges may be secured together by gluing or by locking, or where the sleeve is simply for positioning inside another container, the overlapped edges need not in fact be

connected.

Such a sleeve is particularly suitable for the microwave heating of elongated food products such as sausage rolls or French bread sticks and the like, and the contoured edged overlapping portions will provide double the heating effect in the overlapped area, which will be positioned so as to lie at the required position in relation to the food product.

The sleeve may be simply a wrapping of paper provided with receptor material, or it may be a cut and creased blank defining a top panel, side panels and two base panels which have the contoured edges, the base panels being adapted to overlap to provide the contoured double heating region of the resulting container. A tray may similarly be provided.

It will be understood that the invention may be embodied in trays and box containers by suitable design thereof.

Embodiments of the invention will now be described, by way of example, wherein:-

Fig. 1 is a perspective view to illustrate the formation of laminated material;

Fig. 2 shows the laminated material of Fig. 1;

Fig. 3 is a perspective view of a blank produced from laminated material;

Fig. 4 is a perspective view of the blank of Fig. 3 in erected condition;

Fig. 5 is a sectional elevation taken on line V-V in Fig. 3;

Fig. 6 is a perspective view similar to Fig. 4 but showing an alternative embodiment of the invention;

Fig. 7 is a plan view of a blank erectable into a container according to another embodiment of the invention;

Fig. 8 shows the container of Fig. 7 in erected condition and also shown is a French bread stick to be microwave heated in the container;

Fig. 9 is a view similar to Fig. 7 but shows in a modified arrangement;

Fig. 10 shows the container of Fig. 9 in erected condition;

Fig. 11 shows a container according to a further embodiment of the invention;

Fig. 12 is a blank for erection into a container according to yet a further embodiment of the invention; and

Fig. 13 shows the container of Fig. 6 in erected condition.

Referring to the drawings, in Fig. 1 is shown two sheet materials, namely a substrate material 10 which may be of paper or carton board, and a film 12 forming a carrier film for patches 14 of receptor material applied thereto by any suitable method. In use the films 10 and 12 are laminated together to form the arrangement shown in Fig. 2. The patches 14 are evenly spaced so that the resulting laminate of Fig. 2 can be cut and creased into individual blanks each having a patch 14. The sub-division lines to provide the individual blanks are indicated generally by reference numerals 16 and 18.

In accordance with this embodiment of the present invention, on the opposite side of the substrate 10 is laminated a second film similar to film 12 with individual patches of receptor material thereon somewhat similar to patches 14, except that the second patches are of smaller size than patches 14, and are of a different shape, but they are in register with patches 14.

Fig. 3 in fact shows a blank which is formed from the resulting material, and the second patch of receptor material is indicated by reference 20, and it will be seen to be elliptical and to lie centrally of the patch 14 which is also present in the blank.

The arrangement is also well illustrated in Fig. 5 wherein it will be seen that the patches 20 and 14 lie to opposite sides of the substrate 10, and the covering films 12 and 22 cover the receptor material patches 14 and 20 to prevent any contact between the receptor patches 14 and 20 and the foodstuff which comes into close proximity with the blank.

It should be mentioned that the second film 22 can be applied over the first film 12 i.e. to the same side of the substrate 10 as the film 12. Or the receptors can be immersed i.e. receptors 20 on the bottom and receptors 14 on the top of the substrate.

Reverting to Fig. 3, it will be understood that by overlapping the receptor patches 14 and 20, there is created a central elliptical area or region 24 of high heat generation capacity, and a surrounding region 26 where the receptor patch 14 only exists, a region of low heat generation capacity, both of said regions being in the base of the resulting tray which can be erected from the blank shown in Fig. 3, such tray being illustrated at 27 in Fig. 3.

It will be understood that the side panels and locking tabs shown in Fig. 3 in the blank are simply erected and interfitted in conventional fashion.

In use, when a foodstuff item is placed in the tray 26, and is subjected to microwave heating, there will be a region of increased heating effect, region 24, whilst a lesser heating effect will be created by region 26. It has been found for many foodstuff products that this differential heating arrangement is highly desirable.

Instead of the resulting article as shown in Fig. 3 being a tray, it may also have a top so that it will in fact be a closed box. Furthermore, instead of providing both films with patches 14, 20 on receptor, which has production difficulties, one of the films may be provided all over with receptor material.

Again, instead of having two films as shown, there may only be one film say film 12 with patches or overall cover of metallised receptor, whilst the second receptor patches 20 could be provided by applying printed portions or strips of printing or other coating as set forth for example in said European Application, such receptors being applied before or after the sheet 10 is cut into blanks. The application of strips of liquid receptor composition is particularly simple. Thus, in this preferred case the substrate is covered on one side with film which is overall vacuum metallised or is patched as shown, and to the other side are applied strips of liquid receptor composition at selected positions, and then the substrate 10 is cut and creased to provide the appropriate blanks.

As indicated herein it will be appreciated that many manifestations of the present invention are possible and one

variation is shown in Fig. 6 wherein the tray 27 is formed from material simply as shown in Fig. 2 i.e. without the second receptor material patches applied thereto, and the second receptor material patches 20 are carried by another substrate which is cut into inserts 28 which can be positioned inside the tray, the insert 28 being of the same shape as the tray base so that the patch 20 will be held in the correct disposition in relation to the first receptor layer in the base of the tray.

The present invention provides a convenient and ready means for arranging for differential heating in packaging containers whilst keeping the receptor material of the layers separate, which greatly facilitates manufacture.

It is possible furthermore to provide on an insert such as 28 shown in Fig. 6, that the two receptor patches are carried by that insert which can simply be dropped into a tray or container to provide the resulting differential heating effect as described herein.

Fig. 6 also shows that an alternative form of insert 28A may be provided wherein the second receptor is in the form of a strip 20A applied to the insert 28A by in liquid form by coating printing or the like.

It should be mentioned that the first and second receptor layers can be located to the same side of the substrate or to opposite sides as described herein, and the first and second substrate layers may be oppositely arranged. That is to say the first receptor layer may be arranged to the inside of the container, and the second receptor layer to the outside, which is opposite to that described in relation to Fig. 4.

Referring now to Figs. 7 to 13 of the drawings, in Fig. 7 a

blank of cardboard material is provided with creasing so as to define a top panel 10X, side panels 12X, 14X and base panels 16X and 18X. The blank is covered overall with receptor material, in any suitable manner, for example as set forth in British Patent No. 2,046,060 or European Patent Application No. 0276654, to which reference is made.

The blank of Fig. 7 is foldable about the hinge lines shown in dotted lines to the sleeve configuration shown in Fig. 8 so that the receptor material lies to the inside of the sleeve.

The sides of base panels 16X and 18X as indicated at 20X and 22X are contoured so as to define projecting portions 24X and 26X which are symmetrically arranged in relation to the centre line 28X of the blank, so that when the blank is erected as shown in Fig. 8, the projections 24X and 26X overlap and define in the resulting base a region 30X which is of double thickness and more particularly has two layers of receptor material. When such a sleeve is subjected to microwave heating therefore, the region 30X will heat up to a greater extent than the remaining interior area of the container. This is particularly suitable for the product 32X, a French bread stick to be held in the sleeve whilst in a microwave oven, as the hotter region 30X will ensure that the underside central region of the bread stick 32X is heated to avoid the result which usually takes place that the central underside of the bread is soft and soggy.

The overlapping sides 20X and 22X may be secured together by suitable means such as adhesive, which preferably is unaffected by microwave energy, product weight or high temperature or by means of a conventional carton lock arrangement. If appropriate, it may not be necessary to provide any interconnection between the overlapping base

panels 16X and 18X.

In the embodiment of Fig. 7, the edges 20X and 22X are contoured and the receptor material extends over the entire blank, but it is not necessary that this should be so for the same effect to be achieved. Thus, in Fig. 9, the blank 34X is of rectangular configuration, and the edge regions of the receptor material are contoured as at 36X and 38X in effect to define the same contoured shape for the receptor material as in the Fig. 7 embodiment.

When the blank of Fig. 9 is folded into the sleeve as shown in Fig. 10, the corner portions have no receptor material.

In the arrangement of Fig. 11, the container is in the form of a tray (it could be a closed carton) having hingeable base panel sections 40X and 42X which are provided with the contoured edge regions 44X and 46X so that a double layer region 48X is created in the base of the container so that if a pie 50X to be cooked in the microwave oven whilst in the container requires its bottom central region to be heated more than other regions, the double receptor area 48X will perform the function. The base panels 40X and 42X may simply be hinged to the respective sides of the container and may be folded downwards so as to overlap as shown in Fig. 11.

The container shown in Fig. 13 is a round sleeve 52X, and is formed from a blank 54X of the shape shown in Fig. 12. The blank is overall covered with receptor material, and to form the container of Fig. 13 it is simply wound into tubular form so that the contoured edges 56X and 58X overlap so as to provide the double thickness of receptor area 60X in the finished container as shown in Fig. 13. It is to be noted that although the hatching lines representing the receptor material are shown on the outside of the container in Fig.

13, it is preferred that receptor material be located to the inside of the sleeve.

It would be appreciated that many other embodiments of the invention are possible, provided that within the container there result overlap portions of receptor material which are separated to provide contoured edges where the generated heat as a result of microwave energy will be greater than in other areas of the container.

The receptor material can be applied indeed so as to be present on the container only in those contoured regions which overlap.

The receptor material may be applied to the blank or container by any suitable method such as by printing, transfer metallising processes, patching or laminating.

It is usual to cover the receptor material with plastic film, described for example in said British Patent No. 2,046,060, so as to keep the foodstuff out of contact with the actual receptor material which may be metallic and/or graphite particles. In any case where the receptor is applied as a liquid composition, it is subsequently dried, and preferably will be covered by a film or paper layer to protect same.

CLAIMS

1. Packaging for foodstuff for the cooking of same by microwave heating, wherein the packaging has receptor material which heats up upon being subjected to microwave, and wherein is an area defined in the packaging by two discrete overlapped layers of said receptor material so that said area will heat up to a greater extent than another area or other areas of the packaging provided with said receptor material for the application of more heat to a preselected area of the foodstuff.

2. Packaging comprising a container or an insert for a container, or sheet material formable into a container is produced by providing a base member comprising a substrate, a first receptor layer and a protective covering, the receptive layer being between the substrate and protective covering, and further providing a second receptor layer which in use will overlap said first receptive layer but not exactly so that where the first and second layers overlap there is provided a region of high heat energy capacity, and where the first and second layers do not overlap is provided a region of lower heat energy generation capacity, the second receptor layer being provided in accordance with any one of the following arrangements:-

second layer applied to the base component to one side or the other;

where the base component is a tray or container, the second receptor layer provided as an insert; or

where the base component is a tray or container, second receptor layer provided in a complimentary tray or container which is to be used in conjunction with the base component in

that the tray or container base component interfits with a tray or container of the complimentary component to cause the first and second receptor layers to be appropriately juxtaposed in the finished container.

3. Packaging according to Claim 2, wherein when the second receptor layer is applied to one side or other of the base component this second layer is performed during the manufacture of a multiplicity of the base components in large sheets or webs, prior to the cutting of the sheets or webs into individual base components, which may be for example blanks which are cut and creased so as to be foldable into the container configuration. The base components may also separate the rectangular blanks which are wrapable into sleeve configuration, or they be more elaborate blanks erectable into containers for holding foodstuff.

4. Packaging according to Claim 2 or 3, wherein a plastic carrier film for the receptor material is provided with a plurality of evenly distributed patches of receptor material, these having been applied by any convenient means such as printing or overall application followed by selective removal, transfer application or the like, and such patches for example form the first receptor material layers.

5. Packaging according to Claim 4, wherein the film is laminated to a paper or board substrate trapping the receptor material between the substrate and the plastic film.

6. Packaging according to Claim 5, wherein to the other side of the substrate is applied a second film also provided with receptor material patches forming the second layer of receptor material, said second layer patches being in register with the first layer patches, but at the opposite side of the substrate.

7. Packaging according to Claim 6, wherein the first layer patches are of rectangular configuration and the second layer patches are of round or elliptical shape but are of smaller dimension than the first layer patches so that the second layer patches define the regions of high heat.

8. Packaging according to Claim 7, adapted to be cut and creased to define individual foldable trays of which the base is of the same fitting shape as the first receptor patches so that the entire base of each tray has receptor material therein, but the central region of the base only has the second receptor layer therein and only that region will be heated to a greater extent when the tray is eventually used with foodstuff therein, in microwave cooking.

9. Packaging according to Claim 7, adapted to be cut into individual sleeves or containers which completely enclose the foodstuff.

10. Packaging according to Claim 7, adapted to be cut into rectangular blanks which can be used as wrappings for foodstuff.

11. Packaging according to Claim 2, wherein the second plastic film and its second receptor patches are applied to a second substrate, and that substrate is cut into complimentary components, the first substrate have been cut into base components, and the base components and complimentary components, after erection if appropriate, are adapted to be fitted together so as to result in the same disposition of the first and second receptor patches as described above and for the same purposes.

12. Packaging according to Claim 11, wherein the base and complimentary component comprise a pair of sleeves which

interfit, a container and tray therefor, or two trays which interfit.

13. Packaging for holding foodstuff to be heated by microwave heating comprises sheet material provided with receptor material, portions of said container having said receptor material overlapping in a region where increased heat is to be applied to the foodstuff, and the receptor material in said overlapping region having an edge which is contoured so that the overlapped sections of receptor material define a contoured shape in a region which will coincide with a region of the foodstuff to receive increased heating which results by virtue of the overlapping of the receptor material.

14. Packaging according to Claim 13, wherein the container comprises a blank of sheet material having free edges which overlap to provide said overlapping portions, at least one of said edges being contoured, and the said edges having receptor material thereon.

15. Packaging according to Claim 14, wherein both of said edges are contoured.

16. Packaging according to Claim 15, wherein the said contouring comprises a bulbous convex portion on each edge, so that when the edges overlap, the overlapped region comprises an oval, or circular or the like region where double thickness receptor material exists.

17. Packaging according to Claim 15 or 16, wherein the container is in the form of a sleeve made from a blank of cut and creased material, which is overall provided with the receptor material, the edges of the blank which overlap to form the sleeve being contoured to provide the contouring of

the receptor material.

18. Packaging according to Claim 15, 16 or 17, wherein the overlapping edges are secured together by gluing or by locking.

19. Packaging according to any of Claims 13 to 18, wherein the packaging is a sleeve of paper provided with receptor material.

20. Packaging according to any of Claims 13 to 18, wherein the packaging is a cut and creased blank defining a top panel, side panel and two base panels which have contained edges, the base panels being adapted to overlap to provide the contoured double heating region of the resulting container.

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Databases (see over)

- (i) UK Patent Office
- (ii) ONLINE DATABASES CLAIMS, WPI

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Documents considered relevant following a search in respect of claims

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	EP 0451530 A (NESTLE), see especially C7 lines 31-54	1-3,13
X	EP 0217203 A (ALCAN), see especially Figure 3 and C9 lines 49-58	1-3, 13
Y	EP 0312333 A (MINNESOTA) see especially C2 lines 23-29	1
Y	US 4970358 (GOLDEN), see especially C7 lines 10-29	1-3
X	US 4916279 (JAMES RIVER), see especially C3 line 1 - C4 line 47, C7 line 41 - C8 line 3	1-3, 11,13
X	US 4780587 (JAMES RIVER), see especially C6 line 45 - C7 line 19	1-3, 13-15, 17-20

Category	Identity of document and relevant passages	Relevant to claim(s)

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